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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/589,881	06/09/2000	Jeongmin Moon	3430-0105P	1734

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Birch Stewart Kolasch & Birch LLP
P O Box 747
Falls Church, VA 22040-0747

EXAMINER

NGUYEN, HOAN C

ART UNIT PAPER NUMBER

2871

DATE MAILED: 01/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/589,881

Applicant(s)

MOON, JEONGMIN

Examiner

HOAN C. NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the cited feature "the planar surface of each convex portion has a circular shape" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites the limitation "the directing member" in line 7. There is insufficient antecedent basis for this limitation in the claim. "The directing member" should mean "the light directing member" that guides light along the length of reflector.
2. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. Claim 2 recites the limitation "the directed light" in lines 15 and 16. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 4, 11, 18-22 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshikawa et al. (JP410172318A).

According to claims 1, 11 and 21, Yoshikawa et al. (Figs. 1, 2, 8 and 9) disclose an auxiliary light source device comprising:

- a light source 4
- a light directing member 1 including lower surface having a plurality of convex portion extending from the lower surface, each of convex portions 6 having a substantially planar surface which is substantial parallel to the lower surface (Figs. 8 and 9).
- Reflector 3;
- an entry surface 1f (Fig. 1) connecting the upper and lower reflective surfaces through which light from a light source enters.

According to claims 3, 19 and 22, a spacing between the convex portions decreases with increasing distance from the light source (Fig. 2)

According to claims 4 and 20, the spacing between adjacent convex portions of lower surface of the light-directing member is $300\mu\text{m}$ (0.3mm) that is in a range of $10\mu\text{m}$ to $1000\mu\text{m}$.

4. Claims 1, 2, 6, 9-11 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al. (US5341231A).

According to claims 1, 10 and 18, Yamamoto et al. (Figs. 10, 12 and 13) disclose a reflective LCD device comprising a display panel including two substrates 65a/65b spaced apart, liquid crystal sandwiched between the two substrates; and a reflector 68 to reflect light through the liquid crystal; an auxiliary light source device for supplying light to the display panel including:

- a light source 63a/63b;
- a light directing member 161 including lower surface having a plurality of convex portion extending from the lower surface to ensure an uniform distribution of light along a length of the device (claim 18, as abstract disclosed), each of convex portions 161c having a substantially planar surface which is substantial parallel to the lower surface;
- a light reflecting member to guide light from the light source (claim 2).

According to claim 6, the planar surface of each convex portion has a circular shape (Fig. 13).

According to claim 9 (col.14, lines 45-51), a distance/height between the lower surface and the planar surface of each convex portion is 12 μ m that is less than 50 μ m.

According to claim 11, an entry surface connecting the upper 161 and lower 161 b reflecting surfaces through which from a light source enters.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1, 2, 5-9 and 11-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyashita et al. (US6264343B1).

According to claims 1 and 11, Miyashita et al. (Figs. 1-6) disclose an auxiliary light source device comprising:

- a light source 2;

- a light directing member 11 including lower surface 13 having a plurality of convex portion 12 extending from the lower surface, each of convex portions having a substantially planar surface 14 which is substantial parallel to the lower surface.
- a light reflecting member 21 to guide light from the light source (claim 2).
- Reflector/illuminated object 6.
- an entry surface 16 connecting the upper and lower reflecting surfaces through which from a light source enters (col.4, lines 1-10).

According to claims 5 and 13 (col. 3, lines 64-67), an angle between the lower surface/emitting face 13 and a surface/side protrusion face 15 (Fig. 1) connecting the planar surface/ bottom protrusion face 14 of the convex portion is substantially 90° (faces 15 substantially perpendicular to the lower surface 13), which would be obvious in a range of 90° to 100°.

According to claims 6 and 15, the planar surface of each convex portion has a cross-section of circular shape (Fig. 7).

According to claims 7 and 16, the planar surface of each convex portion has a cross section of rectangular shape (Fig. 7) or rectangular shape (Figs. 3A-B).

According to claims 8 and 17, the plane surface of the plurality of convex portions has a bar shape (Fig 2) extending perpendicular to a direction of light propagation in the light directing member 11 and along substantially an entire width of the reflective LCD device.

According to claim 9 (col. 5, lines 11-13), a distance/height between the lower surface and the planar surface of each convex portion is 5~tm (height) that is less than 50pm.

According to claim 12, each convex portion 12 including a planar portion 14 and side connecting 15 the planar portion with the lower reflective surface 13.

6. Claims 1-5, 11-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Shinji et al. (US6259854B1).

Shinji et al. (Fig. 1 a-1 5b) disclose an auxiliary light source device comprising:

- a light source 1;
- a light directing member 3 including lower surface having a plurality of convex portion extending from the lower surface, each of convex portions 3a having a substantially planar surface which is substantial parallel to the lower surface;
- a light reflecting member 2 to guide light from the light source (claim 2);
- reflector 4;
- an entry surface (Fig. 1) connecting the upper and lower reflective surfaces through which light from a light source enters.

According to claims 3, 19 and 22, a spacing between the convex portions decreases with increasing distance from the light source (Fig. 15b).

According to claims 4, 20 and 23, the spacing between adjacent convex portions.

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of lower surface of the light-directing member is $100\mu\text{m}$ (Fig. 15a) that is in a range of $10\mu\text{m}$ to $1000\mu\text{m}$ and a width W of each portion is $20\mu\text{m} \leq W \leq 200\mu\text{m}$ (abstract), which covers a width less than $100\mu\text{m}$.

According to claims 5 and 13, an angle between the lower surface 3a and a surface (Fig. 4) connecting the planar surface 3b of the convex portion is in a range of 90° to 100° since slope angle $\delta > 5^\circ$ (col. 5, lines 60-62).

According to claim 15, the planar surface of each convex portion has a cross-section of circular shape (Fig. 1 b).

According to claim 16, the planar surface of each convex portion has a cross section of rectangular shape (Fig. 1f).

According to claims 8 and 17, the plane surface of the plurality of convex portions has a bar shape (Fig 1d or 1g) extending perpendicular to a direction of light propagation in the light directing member 11 and along substantially an entire width of the reflective LCD device.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. H7-225323 provided by applicant in IDS.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703)306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SIKES L WILLIAM can be reached on (703)308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703)7468178 for regular communications and (703)308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0530.

HOAN C. NGUYEN
Examiner
Art Unit 2871

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December 28, 2001


TOANTON
PRIMARY EXAMINER